

**Hard metal or cermet body useful as a cutter insert****Publication number:** DE19845376**Publication date:** 2000-01-13**Inventor:** CHEN LIMIN (AT); LENGAUER WALTER (AT); DAUB HANS WERNER (DE); DREYER KLAUS (DE); KASSEL DIETER (DE)**Applicant:** WIDIA GMBH (DE)**Classification:****- International:** C22C1/05; C22C29/00; C22C29/08; C23C30/00; C22C1/05; C22C29/00; C22C29/06; C23C30/00; (IPC1-7): C22C29/02; C22C29/16**- European:** C22C1/05B; C22C29/00; C22C29/08; C23C30/00B**Application number:** DE19981045376 19981002**Priority number(s):** DE19981045376 19981002; DE19981030385 19980708**Report a data error here****Abstract of DE19845376**

A hard metal or cermet body, having a case region comprising outer layers of specified fixed or graded compositions and an innermost layer of specified graded composition, is new. A hard metal or cermet body with a hard phase of WC and/or one or more group IVa, Va and/or VIa element carbides, nitrides, carbonitrides and/or oxycarbonitrides and 3-25 wt. % of a Fe, Co and/or Ni binder phase and with a case region of layers of different compositions. The novelty is that the WC content of the hard phase is 10-96 wt. % and that: (a) an exterior layer adjacent the body surface is 2-30 microns deep and comprises a binder-free carbonitride phase; (b) an underlying middle layer is 5-150 microns thick and approaches a pure WC-Co composition; and (c) a lower most layer is 10-650 microns thick and has binder phase and group IVa and/or Va element contents which increase to the constant values at the body interior and a tungsten content which decreases to the constant value at the body interior. Independent claims are also included for the following: (i) a similar hard metal or cermet body in which all the layers have graded compositions; and (ii) a process for producing the above hard metal or cermet body.

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